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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DOAN, THERESA T

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 05/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/989,372

Applicant(s)

LANE, RICHARD H.

Examiner

Theresa T Doan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 29-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 36-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of "said electrode having a surface aligned over said source/drain region", as recited in claim 36, are unclear as to what is it meant.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the limitation of "said electrode having a surface aligned over said source/drain region", as described in claim 36. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 29, 35-36 and 42-43, insofar as it is in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 102(e) as being anticipated by Jeng et al. (6,184,081) of record.

Jeng et al. teach in figures 1-5 a memory cell comprising:

an electro-polished patterned metal layer 20 forms a lower capacitor electrode that provided over a semiconductor substrate 1 (figure 4);

a transistor including a gate 3 fabricated on the semiconductor substrate 1 and including a source/drain region in the semiconductor substrate disposed adjacent to the gate 3; and

a capacitor including an electrode 20, the electrode having a surface aligned over the source/drain region.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 30-34, 37-41 and 44-54, insofar as it is in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeng et al. (6,184,081) in view of McClure et al. (6,027,860).

Regarding claims 30-32, 37-39 and 45-47, Jeng et al. teach substantially the entire claimed structure, as applied to claims 29 and 36 above, except for the metal layer contains a material selected from the group consisting of noble metals, noble metal alloys and noble metal oxides, specifically platinum material. These materials are known in the art and routinely used to form metal contacts in semiconductor devices as taught by McClure (column 3, lines 33-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to select any one of these materials as a suitable conductive material for capacitor electrodes of Jeng, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. In re Leshin, 125 USPQ 416.

Regarding claims 33-34, 40-41 and 48-49, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a platinum

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layer thickness of approximately 100 angstroms in Jeng's device, since it is a matter of design choice within the skills of an artisan, subject to routine experimentation and optimization.

Regarding claim 44, as sofar discussed above, Jeng et al. and McClure et al. do not teach a processor-based system. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a memory cell into a processor-based system in order to operate the device in its intended use. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Regarding claim 50, Jeng et al. teach in figures 4-5 the electropolished patterned metal layer 20 forms a lower capacitor electrode of the semiconductor device.

Regarding claim 52, Jeng et al. teach the memory module is a DRAM memory (see Abstraction).

Regarding claims 51 and 53-54, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the teaching of Jeng et al.'s device to fabricate specific memory module such as a SRAM memory or a MCM memory, since it is a matter of design choice within the skills of an artisan, subject to achieve its performance criteria.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa T Doan whose telephone number is (703) 305-2366. The examiner can normally be reached on 8:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, OLIK CHAUDHURI can be reached on (703) 308-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TD  
May 1, 2002

  
OLIK CHAUDHURI  
SUPERVISORY PATENT EXAMINER  
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